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Mjöberg recently left for America to carry out a lecture tour by which he hopes to raise sums to cover some of the expenses of his expedition.

MAJOR-GENERAL GEORGE W. GOETHALS will speak in the Great Hall of the College of the City of New York on the evening of January 15, on "The Panama Canal." General Goethals was formerly a student of the City College.

PROFESSOR ROBERT A. MILLIKAN, of the University of Chicago, will deliver the William Brewster Clark Memorial lectures at Amherst, probably early in January. The subjects of his four lectures will be: "The Nature of Electricity"; "Brownian Movements and the Kinetic Theory"; "The Insides of the Atom"; "The Nature of Radiation."

DR. E. W. SCRIPTURE recently read to the Pathological Section of the Royal Society of Medicine a communication on registration of speech sounds in the diagnosis of nervous diseases.

MR. F. W. LANCHESTER, the new president of the Junior Institution of Engineers, will deliver his inaugural address to the institution on Monday, December 11, on "Industrial Engineering: Present Position and Post-War Outlook."

ACCORDING to the *Journal* of the American Medical Association the late Professor A. Neisser, the distinguished pathologist, bequeathed his property to the city of Breslau. It is valued at nearly \$400,000. He stipulated that his villa with its art treasures be maintained as a museum for contemporaneous art, and further, that the rooms be used in giving high-grade municipal concerts and similar entertainments.

PROFESSOR J. WRIGHTSON, president of the College of Agriculture, Downton (1880-1906), honorary professor of agriculture at the Royal Agricultural College, Cirencester, and professor of agriculture and agricultural chemistry in the Royal College of Science, South Kensington, from 1882 to 1898, died on November 30.

THE committee which was formed with the object of commemorating the late Sir William

White's services to the nation in the development of engineering science, and more particularly of naval architecture, has now completed its task. A sum of over \$15,000 was raised by private subscriptions, and this amount has been expended as follows: (1) The provision of a fund for providing a Post Graduate Research Scholarship in Naval Architecture of over £100 per annum, tenable for two years; (2) the erection of a Memorial Panel; (3) a donation of one hundred guineas to the Westminster Hospital. The Memorial Panel has been erected in the entrance hall of the Institution of Civil Engineers. The Research Scholarship Fund has been made over to the Council of the Institution of Naval Architects, who will administer the fund and award the scholarship. The latter is to be known as the "Sir William White Research Scholarship in Naval Architecture."

THE *London Times* states that Christmas Island, in the Indian Ocean, 780 sea miles from Singapore, is suffering from the war. Its sole wealth consists in phosphates of lime, and exports decreased from 150,000 tons in 1913 to 25,700 in 1915. Formerly Germany and Austria took large quantities of its phosphates; in 1915 the whole export went to Australia.

UNIVERSITY AND EDUCATIONAL NEWS

AN anonymous gift of \$250,000 has been added to the endowment fund of the proposed medical school of the University of Chicago. The total amount of the fund has now reached four million dollars, leaving one million three hundred thousand dollars to be collected.

PURDUE UNIVERSITY is erecting a building of brick and Bedford stone for the school of science. In floor area it will be one of the largest structures on the campus.

THE number of students during the summer semester of 1916 in the Austrian universities is reported to be as follows: Vienna, 3,472; Prague (Czech University), 1,891; Cracow, 1,281; Lemberg, 1,174; Graz, 647; Prague (German University), 638; Innsbruck, 584. The proportion of medical students was highest at Vienna and at Graz (both about 30 per

cent. of the total). At Vienna nearly two fifths of the medical students are women.

THE following promotions have been made at the College of the City of New York: From instructors to be assistant professors: Philosophy, Dr. Howard D. Marsh; mathematics, Dr. Paul H. Linehan; chemistry, Dr. Robert W. Curtis and Dr. William L. Estabrooke. From assistant professorships to associate professorships: Physics, Dr. Joseph G. Coffin.

AT the Iowa State College Dr. Charles A. Mann, of the University of Wisconsin, has been appointed associate professor of chemical engineering to succeed Professor George A. Gabriel, who goes into practical work.

DISCUSSION AND CORRESPONDENCE

A REPLY TO "METHODS OF CRITICISM OF 'SOIL BACTERIA AND PHOSPHATES'"

IN the issue of SCIENCE of November 3, 1916¹ Drs. Hopkins and Whiting have taken occasion to arraign me for having sent to certain editors of agricultural papers a letter headed "Confidential and Not For Publication." They also impugn my motives in writing the letter, for they say it was evidently done to "belittle" the importance of their work, whereas my reason for doing so is explained very fully in the second paragraph of the letter, appended below, and as stated, it was sent to the editors because the work of Hopkins and Whiting was "unfortunately being used by some writers for the purpose of making it appear that the same reaction will take place in the soil in connection with raw rock phosphate to essentially the same extent."

Instead of publishing my letter in full, Drs. Hopkins and Whiting quote only certain parts because of alleged lack of "space," but space was taken, nevertheless, to enter into a lengthy discussion of the validity of the work of Professor Mooers and of Director Thorne on raw rock phosphate, and the intimation was made that I had overlooked some work of the latter. This was seemingly not germane to the real issue, for instead of my having attempted to review their work, I wrote to each

of them asking what their results actually showed, and merely quoted, with permission, from their letters. In fact, these letters were of a later date than the literature cited by Hopkins and Whiting in refutation of Mooers' and Thorne's conclusions.

It will be seen, therefore, that the attack by Hopkins and Whiting on these statements resolves itself into an allegation that Professor Mooers and Director Thorne were, in their opinion, incompetent to analyze their own work properly or had misrepresented it to me. This fact I regret exceedingly, for no agricultural investigators in the United States are held in higher esteem by their colleagues than Mooers and Thorne, and hence such allegations can only result in injury to those who make them.

Had my letter been intended as an unfavorable criticism of the work of Hopkins and Whiting, they would most assuredly have been favored with a copy immediately. It was, however, only intended, as stated in the letter itself, as a criticism of the improper use that other persons were making of their results.

I take pleasure in introducing below my letter of July 28, 1916. The reader is asked to note carefully if the letter constitutes an unfavorable criticism of the work of Drs. Hopkins and Whiting or if, as intended, it is merely an appropriate warning to the agricultural press not to draw too far-reaching and improper conclusions from it, for this is the real point at issue.

BOSTON, MASS., July 28, 1916
Confidential and Not For Publication

Dear Sir: My attention has been called within a few days to several articles appearing in the agricultural press which have been inspired by Bulletin No. 190 of the Illinois Agricultural Experiment Station. It appears that Drs. Hopkins and Whiting have experimented with the microorganisms which produce nitrous and nitric acid by the oxidation of ammonia. The work was done in water cultures into which artificially prepared and purified tricalcium phosphate had been introduced. They claim to have shown that the nitrite bacteria caused the lime and phosphoric acid of a highly insoluble phosphate to become soluble.

While this work is of much value as a scientific contribution, it is unfortunately being used by

¹ Vol. XLIV., No. 1140, p. 649.